New Approaches to Sustainable Development

Department: Fudan International Summer Session 2026

<table>
<tr><td>Course Code</td><td colspan="7">GEIS10033</td></tr>
<tr><td>Course Title</td><td colspan="7">New Approaches to Sustainable Development: Transition Pathways, not Goals</td></tr>
<tr><td>Credit</td><td>2</td><td>Experiment (including Computer) Credit</td><td>0</td><td>Practice Credit</td><td>0</td><td>Aesthetic Education Credit</td><td>0</td></tr>
<tr><td>Credit Hours Per Week</td><td>9 credit hours per week. 36+3 tutorial hours in total (one credit hour is 45 minutes)</td><td>Education on The Hard-Working Spirit Credit Hours</td><td>0</td><td>Language of Instruction</td><td>Eng-lish</td><td>Honors Course</td><td>□Yes
☑No</td></tr>
<tr><td rowspan="2">Course Type</td><td colspan="3" rowspan="2">□Core General Education Course
☐Specific General Education Course
□Basic Course in General Discipline
☑Others</td><td colspan="4">2+X Major ：
□Professional Core Course
□Professional Advanced Course</td></tr>
<tr><td colspan="4">Non 2+X Major ：
□Professional Compulsory Course
☑Professional Elective Course</td></tr>
<tr><td>Course Objectives</td><td colspan="7">To acquaint the students with the idea of Sustainable Development (SD) and its 17 goals (SDGs); to introduce the students to the challenges of present day SD practice, and the proposed pathways to transition into a more equitable society; to then enable the students to learn different perspectives in one SD problem, and probe the underlying non-technical mechanisms; and finally to synthesize the knowledge and skills and solve complex, real-world problems, and to develop SD competencies in a fundamentally changing world.</td></tr>
<tr><td>Course Description</td><td colspan="7">Sustainable development is of paramount importance to all people, both present and future. Yet insufficient understanding and ineffective practice are common due to its profound and complex nature. This course is designed to accommodate students of all grades and disciplines, who are interested in the issue of SD, its relevance to real life, and solving the world’s multiple problems through SD transition pathways.
The course will cover basic concepts and contents on SD, its current state and bottlenecks, and the proposed transition pathways. Going beyond single SD goals and specialized knowledge, this course will adopt a holistic mindset and provide experience for</td></tr>
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	transdisciplinary training. The students will be guided to first study one SD issue in single locations, then cross-examine their findings against more holistic, comprehensive perspectives. Conflicts and dilemma among various goals will be identified, and the reasons explored by probing into deeper human shared values systems. Synthesizing this knowledge, experience and skills, the students will further move on to more comprehensive, real world problems involving multiple SDGs. Various competencies will be developed in the process, and the students' understanding of just transitions will be enhanced.

Course Requirements:

Prerequisites: None. Students from all backgrounds are welcome.

Teaching Methods:

The teaching process will be highly interactive. In every week, the course will begin with content teaching of "hard" facts such as the concept of SD, its goals and pathways. It will be followed by class activities including online research, presentation and panel discussion, and WeValue practice. At the end of the week, a small assignment will be given out, to be completed over the weekend and before the next lesson. The results of the assignment will be covered and discussed at the beginning of the next week's lessons. The students will be encouraged to reflect on their own work as well as others', thus developing various competencies required for future learning.

Course Director's Academic Background:

The lead lecturer is Prof. Marie Harder, a Foreign National Thousand Talent professor of Fudan since 2011. During her academic career at Brighton University, UK., Professor Harder has had extensive research and teaching experience in both natural and social sciences, including waste management and recycling, renewable energy, sustainable development, and values systems. At Fudan, her research interest was initially on municipal waste management, and human behavioral change during waste sorting practice. Nowadays she focuses on the WeValue In Situ methodology, a powerful tool she has developed to assist group members to deeply understand each other's tacit knowledge and make it explicit – thus making tacit social knowledge explicit and accessible for input into policies. This transdisciplinary expertise about spanning knowledge types will provide guidance for the course.

Instructor's Academic Background:

Prof. Harder will be assisted and understudied by Assoc. Prof. ZHANG Yi. Assoc. Prof. ZHANG Yi specializes in environmental engineering and wastewater treatment, but also has considerable experience in the field of renewable energy and waste recycling. She will provide contents of China focus, lead and organize class activities, and aid students who need language assistance.

Dr. HUANG Yanyan will act as TA, providing support in and out of the classroom for activity design and implementation. Dr. Huang has attended Wageningen University & Research in Netherlander, and experienced many such teaching approaches, and has considerable practice of them in her research team led by Prof Harder, and in the field for the WeValue process.

Members of Teaching Team				
Name	**Gender**	**Professional Title**	**Department**	**Responsibility**
Marie K. HARDER	F	Professor	Environmental Science and Engineering	Development of course syllabus, providing principle teaching materials, designing course activities and evaluating students' performance.
ZHAGN Yi	F	Associate Professor	Environmental Science and Engineering	Providing materials of China focus and language aid, practice teaching, organizing class activities. Assisting with student evaluations.
HUANG Yanyan	F	Post Doctoral Fellow	Environmental Science and Engineering	Organizing class activities and student liaison. Assisting with class activity design based on experience in NL.

Course Schedule:

Week I: General introduction to SD

Session 1: Introduction to Sustainable Development and its 17 goals (SDGs).

Session 2: Current state of SD practice and its challenges.

Session 3: Exercise 1 and assigning Homework 1 (see the box below).

Week II: Solving a single problem in one place?

Session 4: Exercise 2: Presentation of Homework 1 (see the box below).

Session 5: Continued presentation of Homework 1, and panel discussion/criticism by fellow students.

Session 6: Activity: Why do people think so differently?—Revealing tacit knowledge by WeValue (see the box below). Assigning Homework 2 and introduction to Exercise 2.

Week III: Multiple perspectives and just transitions

Session 7: Exercise 3 and midterm test—a reconsideration of Exercise 1 & Homework 2, and self-critique (see the box below).

Session 8: Introduction of various pathways of "just transitions" into a more equitable future.

Session 9: Theory vs. Practice—Case studies of real previous attempts at just transitions to SD. Preview information provided on next week's topics, form teams.

Week IV: Solving complex, real world problems through SD lens

Session 10: Exercise 4—design in class the solution to a real, complex SD problem, e.g. food security.

Session 11: Continued Exercise 4—identifying various dimension of this problem: discussion and debate.

Session 12: Conclusion and final exam (see two boxes below).

The design of class discussion or exercise, practice, experience and so on:

The course contains multiple interlinked exercises:

Exercise 1: Hometown reports. The students will research their hometown's present SD status in the

classroom. According to the research results, they will identify the strong/weak SD aspects, and the major SD challenge of their hometowns, then map those challenges to the 17 SDGs.

Homework 1: Problem-based case study. The students will form teams of 2 persons, and 2 teams will be assigned one settlement for case study, by the teachers. Each team will work on how to achieve one particular SDG for that settlement. To be done during the weekend.

Exercise 2: Review of Homework 1. The teams will present their Homework in the classroom, with those working on the same settlement presenting side by side. The class and the teacher will form a panel, to review, discuss, criticize and expand the results.

Activity: WeValue is a practice-based learning technique for groups to learn deeply more about understanding each others' tacit knowledge, by inter-subjectively comparing common experiences with each other. This is one type of learning targeted by the UN for Sustainable Development.

Homework 2: Reconsideration of Homework 1. After taking the WeValue activity, the students now gained a deeper understanding on their own values and those of others. With such understanding, the students will, for a second time, attempt at identifying the most important SD issues of their hometown.

Exercise 3 and midterm test: In the classroom, the students will compare their 1st and 2nd answers on their hometowns' SD challenges, and reflect on the changes in the answers, and the reasons behind the changes in their answers.

Exercise 4: The students will conduct an intensive discussion in class, and work out various solutions for a real world complex SD challenge, e.g. food security. They will be guided through several stages of systems thinking problem solving by the lecturers on the possible dimensions, perspectives and roles in this issue, and form groups to find data to formulate their solutions.

If you need a TA, please indicate the assignment of assistant:

Dr. HUANG Yanyan will act as TA, providing support for the design, coordination and implementation of in-class and out-of-class activities. Her responsibilities include organizing class activities, facilitating communication between students and instructors, supporting group work, presentations and discussions, and assisting with the delivery of assignments. Drawing on her academic training in the Netherlands and her practical experience in Prof. Harder's research team and the WeValue process, she will also contribute to the design of interactive and reflective learning activities aligned with the course's transdisciplinary and values-based approach.

Grading & Evaluation:

The final marks will comprise of **FIVE** parts:

1. Attendance and participation: 20%;
2. Homework 1 & Exercise 2: 20%;
3. Exercise 3 (also acting as the midterm test): 20%
4. Exercise 4: 20%; and
5. Final exam: the students will write a short answer in class to two questions given by the teachers. 20%

Usage of Textbook： □Yes(complete textbook information form below) ☑No

Textbook Information (No more than two textbooks) **:**

Title	Author	ISBN	Publishing Time	Publisher	Type I	Type II

					□Self-compiled Textbook (Published) □Non-mainland Textbook □Other Textbook (Published)	□National Planning Textbook □Provincial and Ministerial Planning Textbook □School Level Planning Textbook □Others
					□Self-compiled Textbook (Published) □Non-mainland Textbook □Other Textbook (Published)	□National Planning Textbook □Provincial and Ministerial Planning Textbook □School Level Planning Textbook □Others
Teaching Materials & References:						